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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/144,607	08/31/98	CHESTER	A 10061-1

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EXAMINER
PREISCH, N

ART UNIT	PAPER NUMBER
1764	5

DATE MAILED: 12/17/98

Please find below and/or attached an Office communication concerning this application or
pr ceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/144,607

Applicant(s)
Chester et al.

Examiner
Nadine Preisch

Group Art Unit
1764



☒ Responsive to communication(s) filed on Aug 31, 1998

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-27 is/are pending in the application.

Of the above, claim(s) 20-27 is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-19 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4

☒ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Election/Restriction

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-19, drawn to a method, classified in class 208, subclass 113.
- II. Claims 20-27, drawn to a catalyst, classified in class 502, subclass 64.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the product as claimed can be used in a materially different process such as in a molecular sieve.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Malcolm D. Keen on December 14, 1998 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-19. Affirmation of this election must be made by applicant in replying to this Office action. Claims

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20-27 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicants are reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

Specification

The incorporation of essential material in the specification by reference to a foreign application or patent, or to a publication is improper. Applicants are required to amend the disclosure to include the material incorporated by reference. The amendment must be accompanied by an affidavit or declaration executed by the applicants, or a practitioner representing the applicants, stating that the amendatory material consists of the same material incorporated by reference in the referencing application. See *In re Hawkins*, 486 F.2d 569, 179 USPQ 157 (CCPA 1973); *In re Hawkins*, 486 F.2d 579, 179 USPQ 163 (CCPA 1973); and *In re Hawkins*, 486 F.2d 577, 179 USPQ 167 (CCPA 1973).

Applicants' referral to "*Fluid Catalytic Cracking Zeolite Catalysis*" and "*Fluid Catalytic Cracking Handbook*" on page 5, lines 5-9 of the specification is considered to be an improper

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incorporation by reference because it is describing essential material which is contained in the claims.

Applicants' referral to "*Shape Selective Catalysis Industrial Applications and J. Catalysis*" on page 7, lines 1-5 of the specification is considered to be an improper incorporation by reference because it is describing essential material which is contained in the claims.

Applicants referral to "*Octane Enhancing Zeolitic FCC Catalysts*" on page 13, lines 25-26 of the specification is considered to be an improper incorporation by reference because it is describing essential material which is contained in the claims.

Claim Rejections - 35 U.S.C. § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 1-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, applicants use the terminology of "elevated temperature". The terminology of "elevated" is considered to be indefinite because it is a relative term. It is unclear what temperatures are encompassed by the term "elevated".

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Claim Rejections - 35 U.S.C. § 103/102(b)

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Collins et al.(5,482,617).

Applicants are claiming several processes for reducing the sulfur content of a catalytically cracked gasoline. The processes involve catalytically cracking a petroleum feed containing

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organosulfur compounds in the presence of a cracking catalyst and a product sulfur reduction catalyst as defined in claims 1-19.

The reference of Collins et al.(5,482,617) discloses a desulfurization process for a catalytically cracked feedstream derived from an FCC process. See column 2, lines 38-55. The process comprises contacting a feed containing organic sulfur compounds with a fluidized catalyst at elevated temperatures in the range of 700-850°F. See column 2, lines 30-36 and column 4, lines 4-5. The reference further teaches that the catalyst is regenerated and returned to the reactor using conventional regulator equipment and that the product stream can be fractionated. See column 5, lines 50-65. A product that is derived from the process is a gasoline range material. See column 5, line 2.

The reference teaches that the catalyst comprises a large pore molecular sieve in the form of a faujasite, a zeolite beta or a USY. See column 4, lines 35-38 and 62. The reference teaches that the catalyst may also comprise an intermediate pore size zeolite such as ZSM-5 or MCM-49. See column 4, lines 5-10. The reference further teaches that the molecular sieve component comprises a metal component such as a Group IB, IIB, IIIB, VA, VIA or VIIA metal. See column 5, lines 29-34. Collins et al.(5,482,617) discloses that zinc is a suitable metal. See column 5, line 42. The reference teaches a zeolite with a silica:alumina molar ratio in the range of 25:1 to 70:1. See column 5, lines 23-24. The particle size is in the range of 10-300 microns. See column 4, lines 55-58. The reference further teaches that the zeolite can be combined with a matrix material. See column 4, lines 20-22.

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The reference of Collins et al.(5,482,6170) succeeds in disclosing a process with steps corresponding to applicants' claimed catalyst contacting, regeneration and fractionation. Furthermore, the reference also succeeds in disclosing a catalyst with components corresponding to those claimed by applicants. Since the reference does not limit the alpha value^{or UCS value} of the catalysts, it is considered to encompass applicants' claimed alpha values and UCS'S (unit cell size). Furthermore, the alpha value and UCS value are inherent in the composition itself. Since the same catalysts are disclosed, the same alpha values and UCS values are encompassed.

It is noted that the reference does not refer to the disclosed zeolites/molecular sieves as cracking catalysts or product reduction catalysts. However, the disclosed compositions are considered to act in the capacity of cracking catalysts/product reduction catalysts because they would inherently accomplish the same conversion since they are contacted with the same feed under the same reaction conditions.

Applicants' process is anticipated by the reference of Collins et al.(5,482,617) because it discloses the same process steps and catalyst components.

In the alternative, if the reference does not disclose applicants' specific combination of catalyst components or separate addition of different components, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select any combination of components disclosed by the Collins et al. reference, including the specific composition combinations and separate component addition claimed by applicants, because the reference discloses any combination to be suitable for accomplishing the disclosed process. Applicants have

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not demonstrated anything unexpected with respect to the specific combination of cracking catalyst and product reduction catalyst or to the separate addition of the sulfur reduction catalyst.

Since the reference does not limit the alpha value and/or UCS value of the zeolite catalyst, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select a zeolite with any alpha value and/or UCS value to accomplish an effective conversion in the process disclosed by the reference of Collins et al.(5,482,617), including the alpha values and UCS values claimed by applicants, because it is within the level of ordinary skill in the art to select a catalyst parameter in a known process in order to accomplish a desirable conversion.

Prior Art of Record

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The references of Miller et al.(5,382,351), Collins et al.(5,401,391), Gilson (4,834,867), Herbst et al.(4,929,337) and Owen (4,980,051) disclose processes with steps/catalysts similar to those claimed by applicants.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nadine Preisch whose telephone number is (703) 305-2667. The examiner can normally be reached on Monday through Thursday from 7:30 am to 6:00 pm.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

December 15, 1998

N.P.

NP

Walter D. Griffin

**Walter D. Griffin
Primary Examiner**